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The possibility of use research methods of soil organic matter for assess the biochar properties

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Abstract

To characterize the biochar prepared in different pyrolysis modes of various woody and herbaceous materials (10 samples) used the method of stepwise oxidation of soil organic matter (SOM) and methods extraction of SOM fractions (by the hot water and mixture Na4P2O7-NaOH). Results showed that the content of more oxidizable organic matter (OM) in biochar samples depends on the mode of pyrolysis and source of plant material. There is a strong positive correlation between the content of more oxidizable OM and the content of labile OM fractions in biochar samples. The content of OM of the inert to oxidation in biochar samples obtained at pyrolysis temperatures about 400-6000C approximately constant and does not depend on the initial material. Using the method of SOM estimation for characteristics of biochar is promising, since this information can be used in existing models and concepts of the dynamics of OM in soils.

Keywords

Biochar, Carbon seguestration, Inert organic matter, Labile organic matter, Soil fertility, Stable organic matter